

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/807,774 Confirmation No.: 4626
Applicant : Harald KAUFMANN
Filed : April 17, 2001

Group Art Unit: 2854
Examiner: ZIMMERMAN, Joshua

Docket No. : 436.0004
Customer No.: 25534

For : SERIAGRAPHY REFLECTION TRANSFER PRODUCT AND
METHOD FOR PRODUCING THE SAME

DECLARATION UNDER 37 C.F.R. 1.132

I, Mr. Holger Weber, hereby declare and state that:

1. I am a consultant for Print Systems for 20 Years.
2. I am a citizen of the Federal Republic of Germany and am fluent in German and English. I live in London, UK.

The following is a list of my prior positions and current position:

3. 1989 – 1996 Technical Director and Consultant for Texo-Print GmbH (screen-printing department) Development and Research Textile Transfers.
4. 1995 – 1997 Director and Consultant for HCC GmbH, Consultant Print Technic , Development digital Sublimation Ink Transfer systems with HP.
5. 1997 – 2001 independent Consulter for international customers in Japan, USA, China, Russia, Poland, Europe.
6. 2001-2007 General Consultant and Manager for TransPrint GmbH (Screen-Printing Department, Offset-Printing Department, Transfer Department, Flock Department, Sticker Department, etc.).
7. 2007 – 2009 IMM Ltd. London, technical consultant for development and research Print Industries for international customers and also computer assisted courses for screen printing and coating procedures.
8. 2009 – 2010 Printec & Services Ltd Weybridge/Surrey international consulting print & coating industries. Development and research for a new Technologie for ink feeding systems for Flat and role Systems.

9. I am skilled in the art of screen printing and transfers.

10. I have read and understood U.S. Patent No. 3,172,942 (Berg), U.S. Patent No. 6,060,157 (LaPerre '157), U.S. Patent No. 5,602,775 (LaPerre '775) and U.S. Patent No. 3,420,597 (Nellessen), which were cited in the above US patent application.

A. The Claimed Motif

11. The pending claims in the above patent application, in particular independent claim 43, recite: *"imprinting a reflection ink layer comprising a colored ink and a plurality of reflection particles onto said transfer adhesive, wherein said reflection ink layer forms a motif that is imprinted with a correct side in a plan view"*.

12. It is to be noted that none of the cited references discloses printing motifs with a correct side in a plan view.

13. In particular, Berg (US 3,172,942) can only cut free-standing motifs from a sheet (col. 2, lines 52-55), which impairs the economic efficiency in view of the huge amount of the waste produced, the personnel expenditure and the enhanced production time in meeting the specific customer requirements. A significant advantage of the present invention is that such waste of material, time and costs is avoided.

14. Even if a person skilled in the art would combine the teachings of Berg with LaPerre '157 (US 6,060,157), he would not achieve the claimed invention in respect of the claimed motif. This is particularly due to the fact that according to LaPerre '157 the arrangement of layers is viewed from the back side (see e.g. claim 1 or Fig. 10 of LaPerre '157), which unavoidably implies that the designs have to be produced in a mirror-wise (mirror-reversed) fashion. See Exhibit 1.

B. Significant Advantages of the Claimed Invention

15. Particular significant advantages of the present invention over the cited prior art are that, with the method of the present invention:

- any damages, irregularities, defects or the like can already be recognised and identified before applying the reflection transfer to a substrate, and
- the reflection properties as well as the colouring properties and the accuracy of the printing result can already be tested before applying the reflection transfer to a substrate (and even before the application of the transfer film 5 to the layer stack shown in Fig. 1 of the present application, i.e. before obtaining the structure shown in Fig. 2 of the present application). See Exhibit 2.

16. The aforesaid difference/advantages are of particular relevance if the method according to the present invention is used not only for refinement of relatively low-price T-shirts or the like, but also for refinement of expensive and high-quality design textile products or leather bags, unique specimen during the sampling of novel design collections etc.

17. The above advantages can only be achieved using the present invention, and not with the teaching of the cited prior art for the following reasons:

A. With Berg's method, it is impossible to achieve a structure of an (isolated) reflection transfer as shown in Fig. 1 of the present application, since Berg realizes a layer sequence "carrier coating 10 → transparent beads 14 → adhesive layer 18". In Berg's method the whole structure shown in Fig. 1 of Berg has to be rotated by 180° before applying to a substrate with the carrier coating 10 being removed only after the application with heat. The temporary removable liner 19 has to be removed before the application onto the substrate and before heating. Accordingly, a layer sequence as claimed can be achieved according to Berg only after applying the arrangement of layers to a substrate including the above rotation, and after removing the carrier base 10.

B. Also, LaPerre '157 only enables to test the quality of the transfer after the transfer has been applied - in a mirror-reversed fashion - onto a (transparent) substrate. Before this applying step, a viewer would not be able to look/view through the silicone coated paper used in the method of LaPerre '157. See Exhibit 3.

18. Here, the claimed method has a significant advantage in that the last layer is the coloured reflective ink with the reflective particles. Only in the claimed methods it is possible to include colour pigments directly in the reflective ink layer. This also

enables – which is very important - to control the specific colour matchings which may be given from the customers directly after producing the Transfer when it is on the base material and before transferring the whole transfer to an (expensive) substrate.

19. The present invention, as the only system worldwide, involves a structure of the reflective transfer in which the reflection particles are exposed before applying the transfer to a substrate, and even before the application of the transfer film 5 to the layer stack shown in Fig. 1 of the present application, i.e. before obtaining the structure shown in Fig. 2 of the present application).

20. This makes it possible, as a further significant advantage of the invention, to realize special treatments, refinements, or the like (and to thereby achieve further design effects) before applying a transfer film or tape.

C. The Claimed Base Medium and Transfer Film are Not Suggested by Berg

21. The present invention as defined in pending claim 43 further recites:

- a base medium on which the whole layer sequence is applied (see Fig. 1) and which has to be removed before applying the structure onto the substrate, and
- a transfer film which is removed only at the very end, i.e. after adhering the structure onto the substrate by means of heat or pressure.

22. Berg's method starts with the carrier base / carrier coating 10 as a base medium (see col. 4, lines 9-10 of Berg). However, Berg fails to teach applying a transfer adhesive on the carrier base 10 or applying a transfer film on the reflection ink layer. As far as the temporary removable liner 19 is concerned, it is to be noted that this temporary removable liner 19 is not a transfer film in the meaning of the present invention, since this temporary removable liner 19 "is applied over the adhesive layer 18 of the structure so as to protect it from contamination prior to application to a substrate" (see col. 3, lines 10-13 of Berg). Furthermore, this temporary removable liner 19 has to be removed before applying the structure onto a substrate.

23. In contrast, the transfer film according to the present invention as defined in claim 43, serves for transferring the structure onto a substrate and is removed only after adhering the structure onto the substrate by means of heat or pressure, i.e. at the very end of the whole process. Considering this last aspect, a transfer film in Berg's method could only be identified with the carrier base 10, which however would contradict to the above interpretation of identifying this carrier base 10 also as the base medium in the meaning of the present invention.

D. The Combination of Berg, LaPerre '157, and Nellessen is Improper

24. A person skilled in the art would not modify Berg's method in view of LaPerre '157 because of the following reasons:

A. Berg uses a thermoplastic layer in which the beads sink thereby forming a homogenous/uniform layer. Afterwards, a coating (in particular aluminium) is deposited from above. Then, colour layers are deposited.

B. If a skilled person would try to modify Berg's method in view of LaPerre '157, a problem that would arise in that the beads could not be provided with a reflective coating by deposition or the like, since the respective base side (i.e. the side facing to the opposite direction of the person looking at the reflective transfer of LaPerre) would not be accessible anymore. Furthermore, Berg would have to abandon his concept of realising a homogenous/uniform layer of beads, since a layer in which the beads can be embedded in order to achieve such a uniform structure would not exist anymore.

25. The film and reflective particles disclosed in Nellessen (US 3,420,597) are not combinable with the method of LaPerre '157, since Nellessen unavoidably requires an etching step in order to expose the beads after the beads have been applied before to a painted sign or the like. It is, however, to be noted that any etching process performed on a transfer as used in Berg or LaPerre '157 would destroy the whole layer sequence and make the whole transfer useless.

26. Furthermore, it is also to be noted that any etching is explicitly denoted as disadvantageous (as time-consuming and labor intensive and in view of the etched

appearance), and avoided according to LaPerre '157 (see col., 1, lines 55-59 of LaPerre '157). Even under the assumption that an etching step as disclosed by Nellessen would be applied to a transfer after applying the same to a substrate, the result (e.g. with regard to reflection properties) would in any case be observable or could be tested only at the very end and after the applying step to the substrate (see above remarks).

27 A colour-matching (see paragraph 18 above) would not possible because of the etching step.

28. As a general and common feature of conventional transfers, the surfaces which will later be visible on the substrate are printed on a transfer paper with wet colour and, as already outlined above, in a mirror-reversed fashion, are afterwards dried, then provided with an adhesive and finally transferred to a textile. The surface which will later be visible on the textile, is therefore formed by the surface of the transfer paper and will have the corresponding properties and a mirroring, matt or dull appearance. See Exhibit 4.

29. In contrast thereto, according to the present invention the surface visible on the textile will be rough as a result of the true-sided process and also as a result of avoiding a surface contact with a transfer film or paper in a wet state of the colour.

30. A comparative illustration of both conventional transfers and the inventive transfer is shown in Exhibit 5.

E. Intermediate Ink Layer

31. In addition to the above statements, the subject-matter of independent Claim 55 is inventive over the cited prior art. Claim 55 also recites:

"imprinting a non-reflective intermediate ink layer on the transfer adhesives"; and
"imprinting the reflection ink layer onto the non-reflective intermediate ink layer".

Schematic diagrams of a "Print order" with an intermediate ink layer is, only by way of illustration, shown in Exhibit 6.

32. It is to be noted that LaPerre '775 (US 5,602,775) does not disclose this feature and therefore, if combined with the other cited documents of Berg, LaPerre '157 and Nellessen, would not result in a method being defined by claim 55.

33. According to LaPerre '775, the optional coloured layer 14 or layer 15 is attached to an adhesive layer 13 on a side of the adhesive layer opposite to that which has the glass beads 11 (see Fig. 4, column 27, lines 5-18 of LaPerre '775). Accordingly, the glass beads 11 are separated from the colour layer by adhesive 13. As a direct consequence, LaPerre '775 does not teach the claimed intermediate ink layer.

F. White or Colored Adhesive Agent

34. In addition to the above statements, the subject-matter of claim 46 is inventive over the cited prior art. Claim 46 further recites *"the transfer adhesive comprises a white or colored-covering adhesive agent"*. Accordingly, the claimed transfer adhesive is not translucent.

35. Even if Berg is interpreted as disclosing the option of using white pigments, the use of a white or colored-covering adhesive agent as claimed in claim 46 is definitely excluded from the method according to LaPerre '157. The reason is that, given the above-mentioned background according to which the arrangement of layer in LaPerre '157 is viewed at from the backside, all layers in this arrangement necessarily have to be translucent, i.e. not white or colored. Accordingly, it would be impossible to combine the concept of LaPerre '157 with Berg to arrive at the subject matter of claim 46. Although LaPerre teaches that it is possible to put some pigments in the layers, it has to be made sure according to LaPerre that the layers are transparent after applying.

G. Transfer Adhesive/Reflection Ink Mixture

36. In addition to the above statements, the subject matter of claim 62 is inventive over the cited prior art. Claim 62 recites *"applying a transfer adhesive/reflection ink*

mixture comprising a plurality of reflection particles on the adhesive-repellent base medium to form a motif comprising at least two parts”.

37. This method is particularly effective in term of costs and avoids the requirement of applying the several layers of transfer adhesive and reflection ink in sequential steps. None of the cited references, in particular neither Berg nor LaPerre '157 nor Nellessen, disclose this feature.

H. Long-Felt Needs

38. The non-obviousness of the invention is also established by long-felt but unsolved needs in the art. See Exhibit 7.

39. Exhibit 7 illustrates an actual customer inquiry from PUMA® for a reflective PUMA logo on 100,000 t-shirts. Exhibit 7 shows how this reflective transfer is accomplished according to the present invention in contrast to the reflective transfer of the prior art, i.e., Berg.

40. There are multiple advantages of the present invention which cannot be achieved by reflective transfers in the art and this underscores why there is substantial commercial interest in the invention:

A. the present invention allows for multiple colors (see PUMA lettering and animal outline), dashed fonts (see PUMA lettering), and symbols (see ®); whereas the prior art cannot achieve these effects.

B. no waste is generated; whereas there is substantial waste in the process of the prior art.

C. the motif is imprinted with a correct side in a plan view, unlike the mirror-reversed images of the prior art.

D. single pieces of a cut-out motif of the prior art must be positioned and applied to a t-shirt by hand; whereas, the present invention allows application of the entire reflective transfer to the t-shirt via transfer film/tape.

E. the resulting motif of the prior art cannot be adjusted based on the nature of the textile substrate (i.e., a grey t-shirt); whereas the claimed reflective transfer

can be adjusted so that when applied to a particular substrate (a grey t-shirt) it readily stands out and has superior reflection properties.

I. Worldwide Recognition of Patentability of Invention

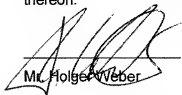
41. The inventive step or nonobviousness of the present invention has been recognized by a substantial number of patent offices around the world, as shown by the following Table:

Country	Patent No.
South Africa	2001/3229
Turkey	TR 2001 01042 B
Singapur	80287
Russia	2220051
Poland	190115
Mexico	241429
Republic of Korea (South)	473741
India	214962
Hungary	227133
Czech Republic	295 217
China	ZL 99812373.0
Canada	2,346,984
Brazil	PI 9914758-0
Australia	756160
Portugal	EP 1 137 546
Netherlands	EP 1 137 546
Italy	EP 1 137 546
Ireland	EP 1 137 546
Greece	EP 1 137 546
Great Britain	EP 1 137 546
France	EP 1 137 546

Spain	EP 1 137 546
Germany	EP 1 137 546
Switzerland/Liechtenstein	EP 1 137 546
Belgium	EP 1 137 546
Austria	EP 1 137 546
European Patent (EPC-States)	EP 1 137 546
Germany	DE 199 15 713
Germany	DE 198 48 863

J. Verification

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.


Mr. Holger Weber

13/December 2010
Date

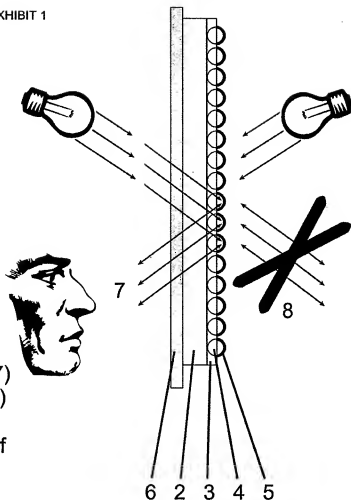
Laperre

EXHIBIT 1

- 6 Glass Panel
- 2 Transparent Adhesive Layer
- 3 Transparent Binder
- 4 Transparent Beads
- 5 Reflective Coating
- 7 Visual Effects
- 8 no Effect

Visual effects only through glass panel in a mirror inverted design (7) (after transferring onto glass panel)

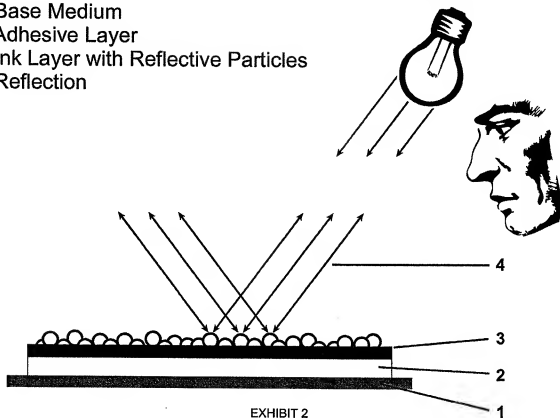
No visual effect from the top side of the transfer (8)



Kaufmann

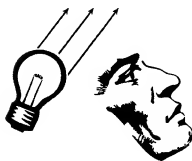
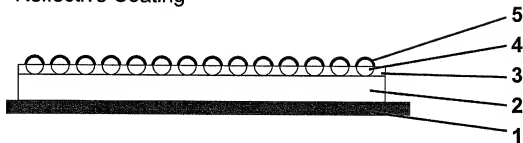
- 1 Base Medium
- 2 Adhesive Layer
- 3 Ink Layer with Reflective Particles
- 4 Reflection

Visual control possible
directly after printing
before applying the transfer tape



Laperre

- 1 Base Medium
- 2 Transparent Adhesive Layer
- 3 Transparent Binder
- 4 Transparent Beads
- 5 Reflective Coating



No visual effects after production
and before removing the Base Medium

EXHIBIT 4

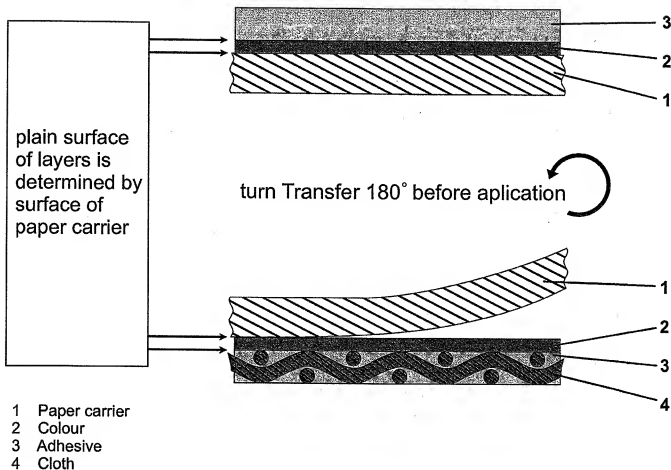


EXHIBIT 5

Conventional Transfer

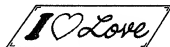
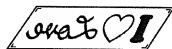
reflectra® Transfer

Design

I ♥ Love

I ♥ Love

How to Print



Additional Step(s)



Apply Tape and remove paper carrier

Transferring

Turn around and place on garment



Heat transfer and remove Carrier



Heat transfer and remove Tape

Result



no reflection



reflects when illuminated

REFLECTRA Print Order

EXHIBIT 6

Print order:

1. Adhesive (+0.20mm)
(yellow)

↑ 1.



REFLECTRA Print Order

EXHIBIT 6

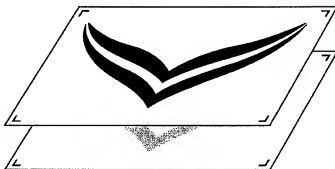
Print order:

2. Intermediate Layer (100%)
(black)

1. Adhesive (+0.20mm)
(yellow)



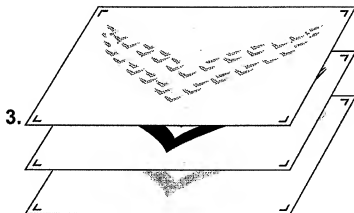
2.



REFLECTRA Print Order

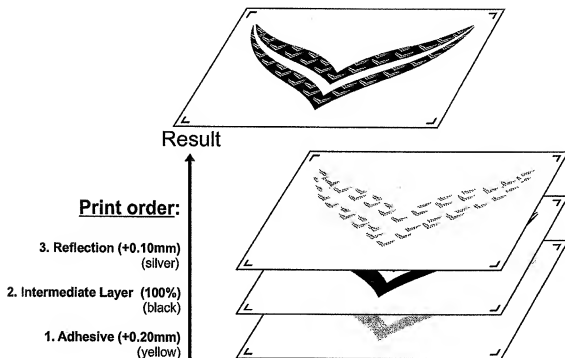
EXHIBIT 6

- Print order:**
3. Reflection (+0.10mm)
(silver)
 2. Intermediate Layer (100%)
(black)
 1. Adhesive (+0.20mm)
(yellow)



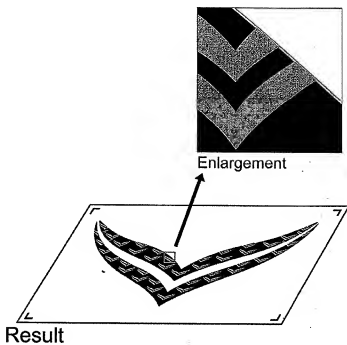
REFLECTRA Print Order

EXHIBIT 6



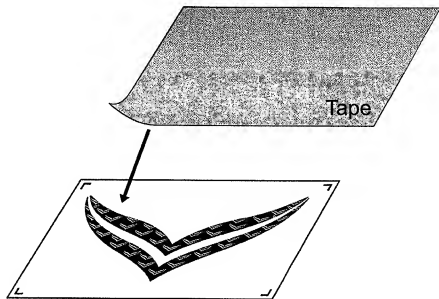
REFLECTRA Print Order

EXHIBIT 6



REFLECTRA Print Order

EXHIBIT 6



REFLECTRA Print Order

EXHIBIT 6

remove carrier before transferring

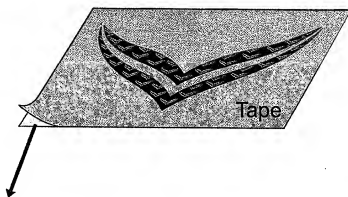


EXHIBIT 7

Enquiry



Customer Enquiry

- freestanding outlined Puma Logo, HKS 32
- dashed Puma font and TM sign, HKS 57
- reflective
- Sample on grey T-Shirt
- Quantity: 100,000 pieces

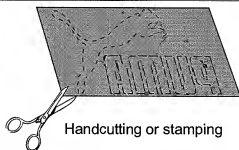
System

Berg Reflective Transfer

Kaufmann Reflective Transfer

Realisation
of Design

- only single colour possible
- dashed font not possible
- letter interspaces not possible
- outline logo not possible, only silhouette
- trademark feature not possible

Production/
Preparation

Handcutting or stamping



2 colour reflective print

Waste
production

Waste: about 75% of foil

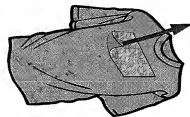
no waste: design imprinted with
the correct side in a plan view

Application

Single objects have to be positioned
separately and by hand

Heat transfer and remove Tape

Apply Tape and remove carrier



Heat transfer and remove Tape

Sample
ResultRequired sample
quality and quantity
can not be realized